



# WHY CHANGE A MODE OF TRAVEL AND TO WHICH ALTERNATIVE?

Development of the intention to change according to the type of mode  
used and chosen alternative

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Host and organiser:



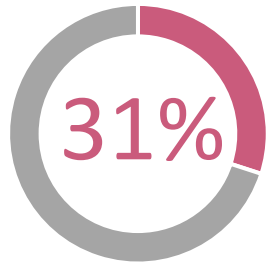
Supporting organisations:



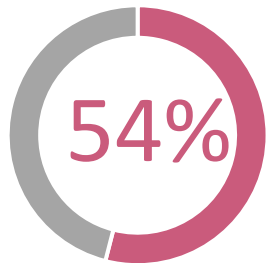
Co-sponsor:



# Context



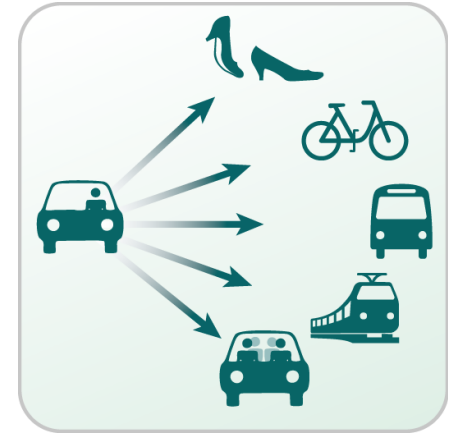
of all greenhouse gases



of French people with a daily use

Solution

Modal shift

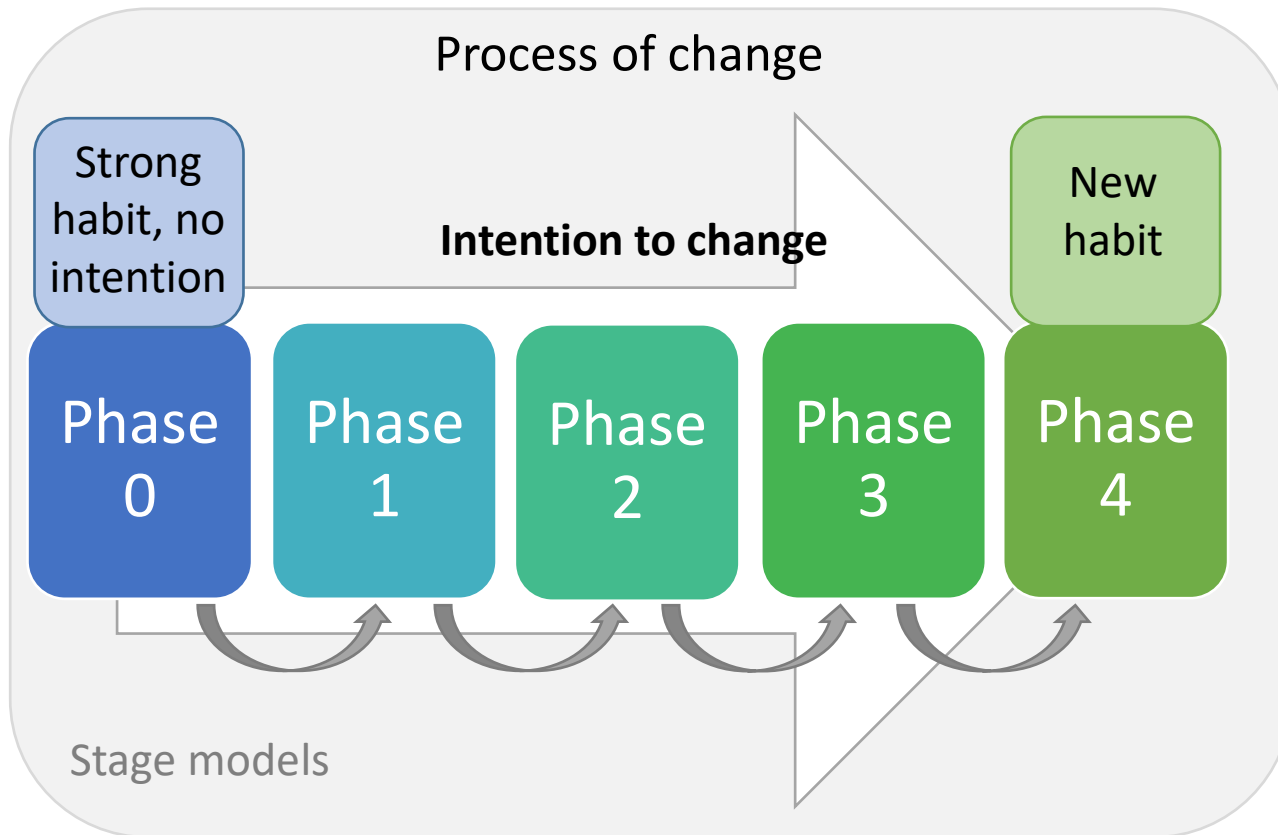


## How can we convince people to change their mode of travel?

→ Need for a psychological intervention based-approach

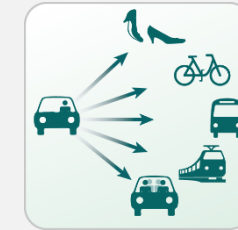
# Theoretical background

How people change their behavior?



## Limits

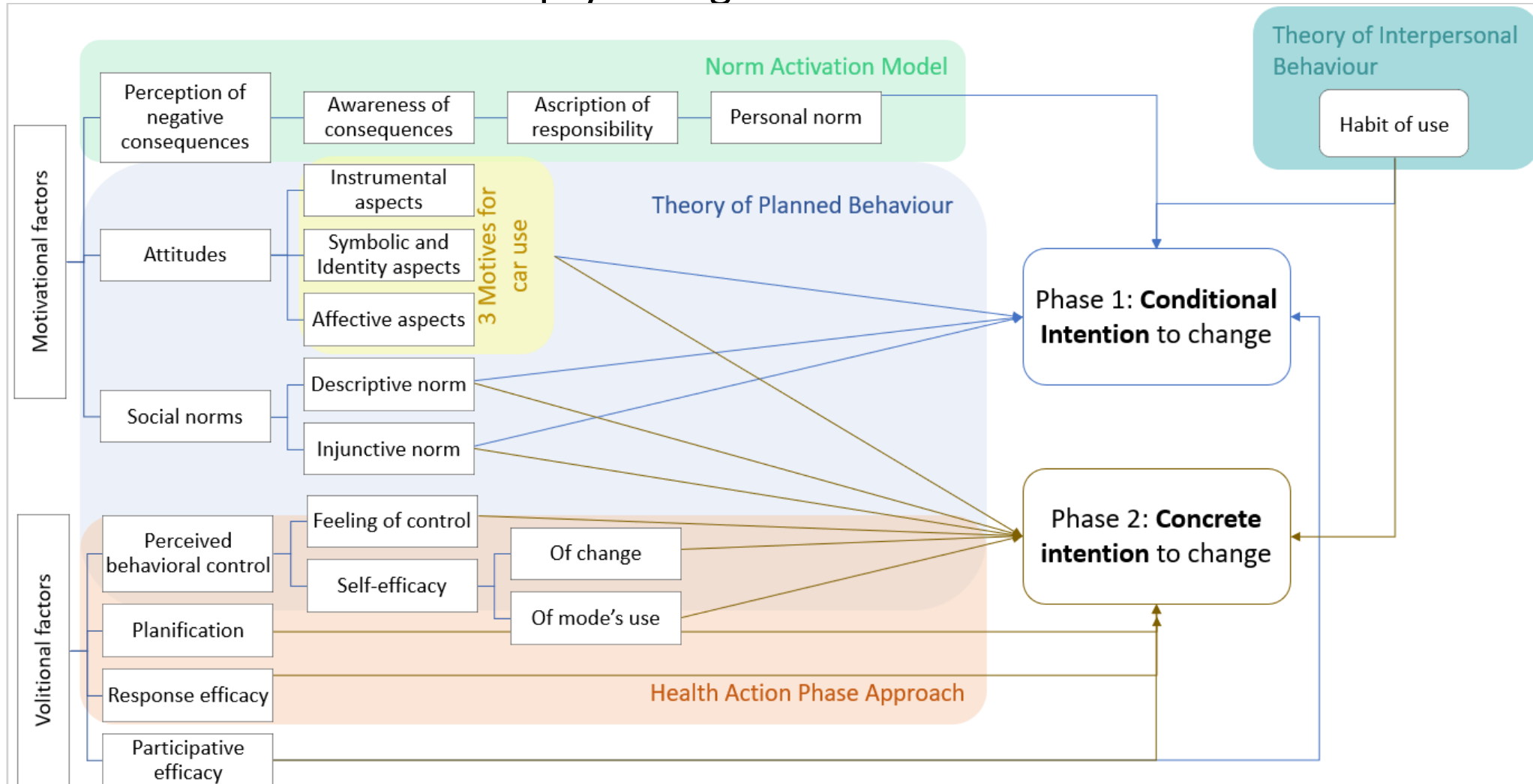
1. One model for modal shift



2. Basic idea that people want to avoid negative consequences
3. Complemented with other transportation theories

# Theoretical background

What are the psychological determinants of intention?




# Theoretical background



What are the psychological determinants responsible for the development of an intention to change a mode of travel?

Commonalities?

## 3 Types of mode

Individual Motorized Vehicle (IMV) 

 Collective mode (CM) 

Active mode (AM) 

Differences?

## 3 Main comparisons

Change to non-IMV 

Change from IMV 

Change from non-IMV 

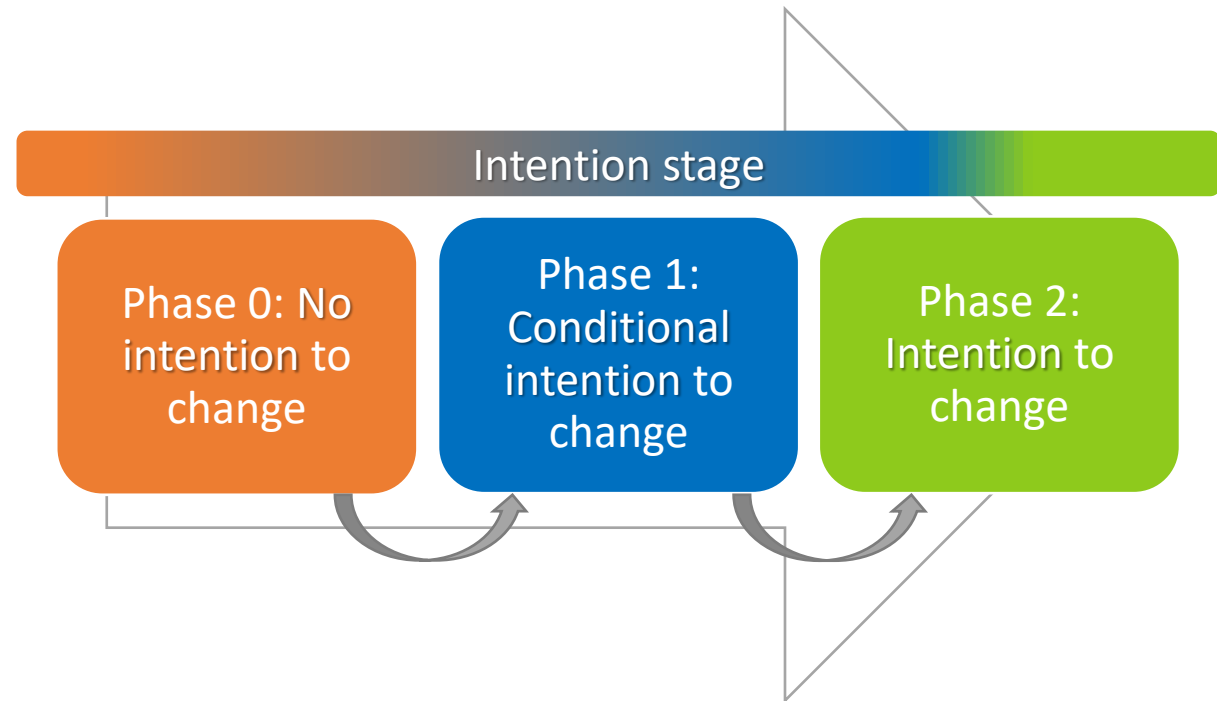
# Methodology



## Online questionnaire N = 308

1st part:

- Main mode of travel (frequency, habit)?
- Intention to change → 3 phases
- Choice of Alternative



# Methodology



## Online questionnaire N = 308

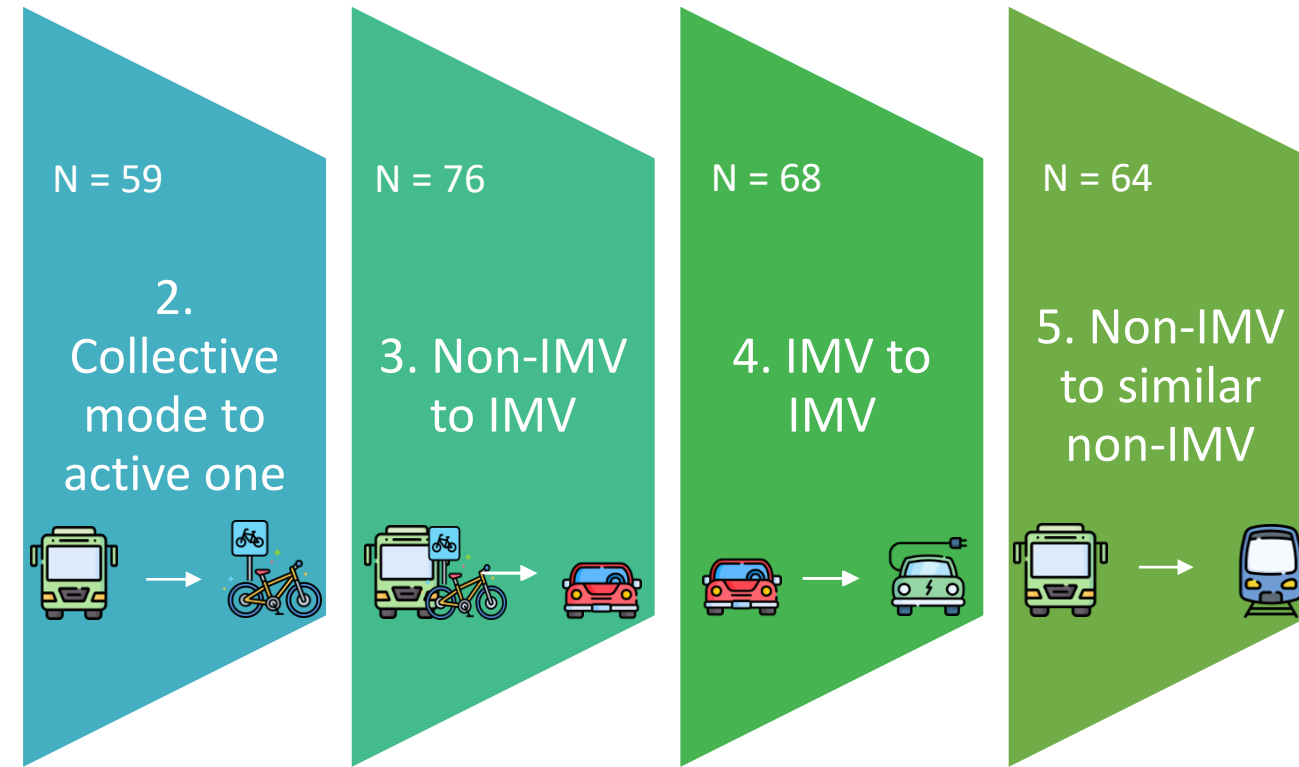
### 1st part:

- Main mode of travel (frequency, habit)?
- Intention to change → 3 phases
- Choice of Alternative

### 2<sup>nd</sup> part:

- Perception of modes
- Efficacy variables
- Social values, sociodemographic variables

## → 5 Paths of change



# Results

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- Result analyses:
  - Means comparisons between phases (ANOVA's)
  - Non parametrical tests

## 3 Main comparisons

Change to non-IMV

Paths 1, 2 & 5

Change from IMV

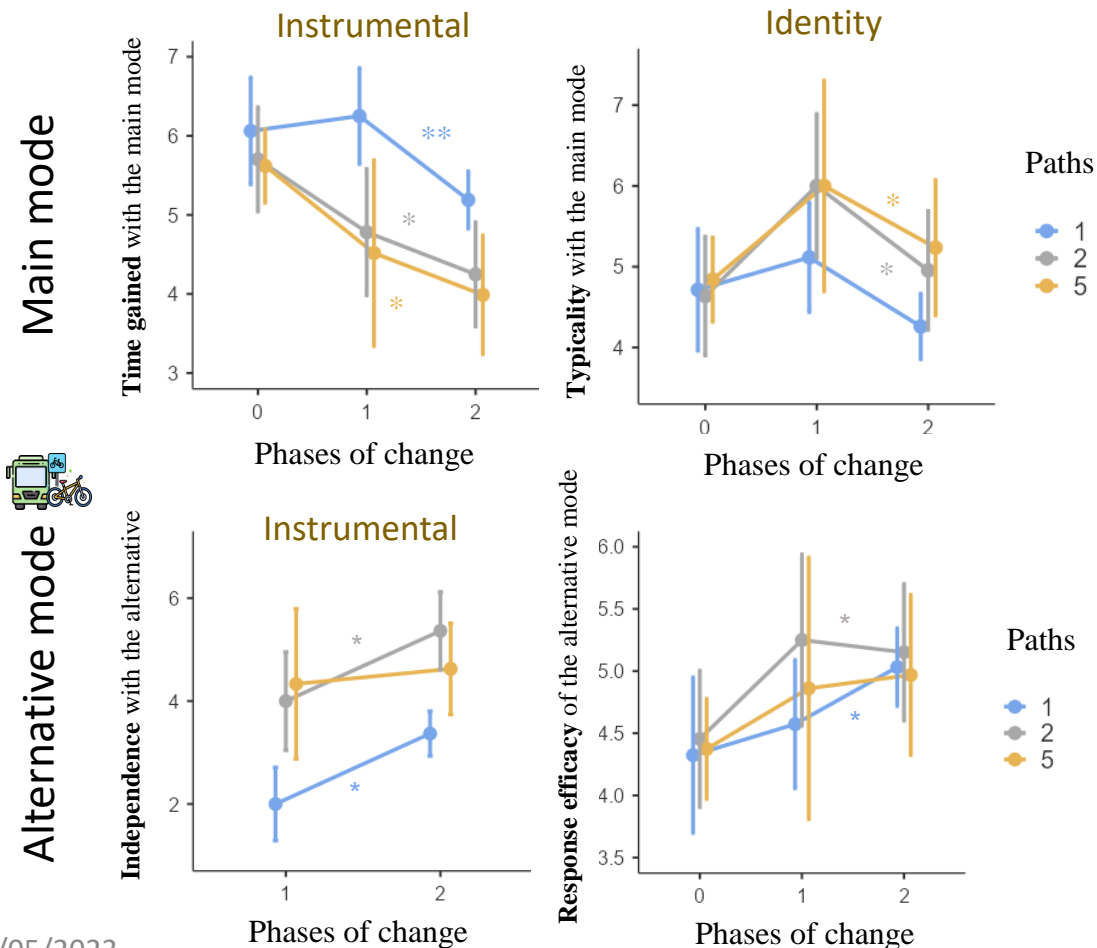
Paths 1 & 4

Change from non-IMV:



Paths 2, 3 & 5

# Results: Change to non-IMV →

## Common factors




## Specificities for each path

Specific for  →  Path 1


### NAM's determinants:

Awareness of negative consequences  
Ascription of responsibility  
Personal Norm

### TIB's determinants:

Habit of use 

### TPB's determinants:

Affective aspects 

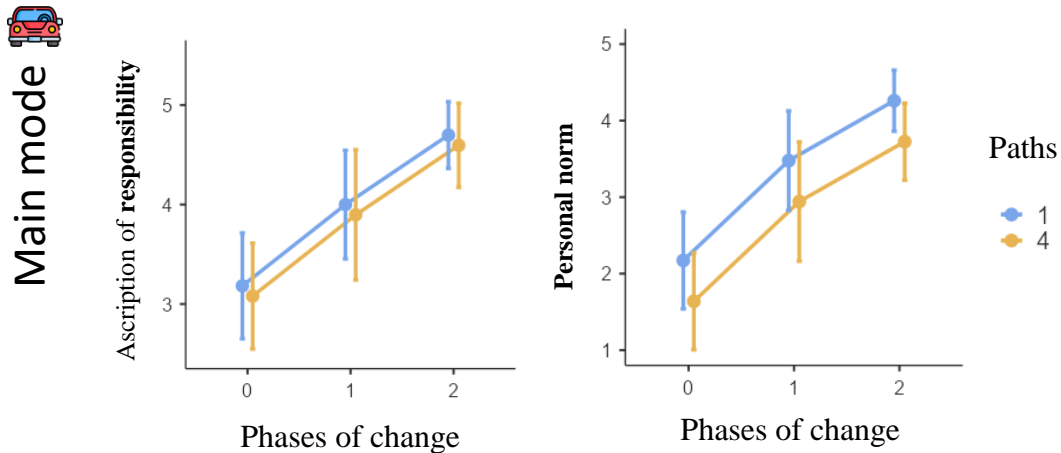
Self-efficacy  
Feeling of control

HAPA

# Results: Change from IMV




## Common factors




## Specificities for each path


Specific for  → 

TIB's determinants:

Habit of use 

TPB's determinants:

Affective aspects 

Instrumental aspect 

Self-efficacy

Feeling of control

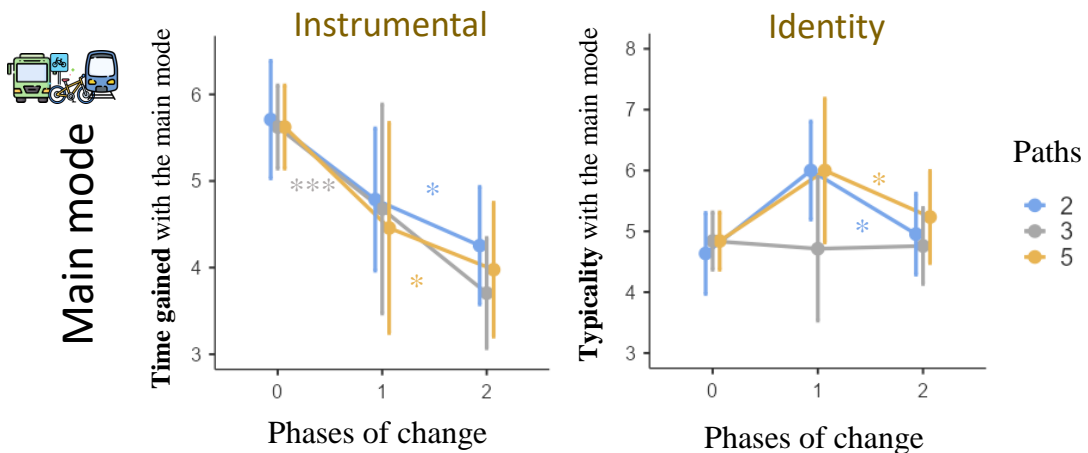
Response efficacy

HAPA

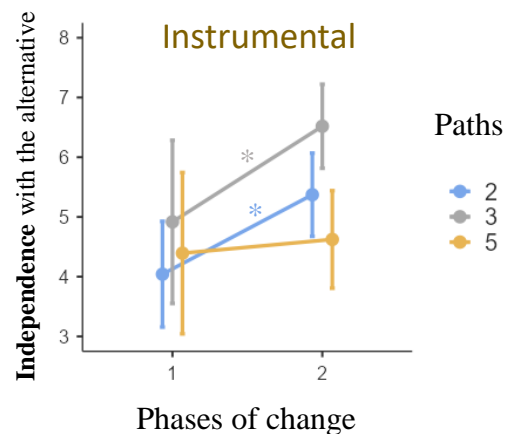
# Results: Change from non-IMV



## Common factors




## Alternative mode



## Specificities for each path

Specific for 

TPB's determinants:

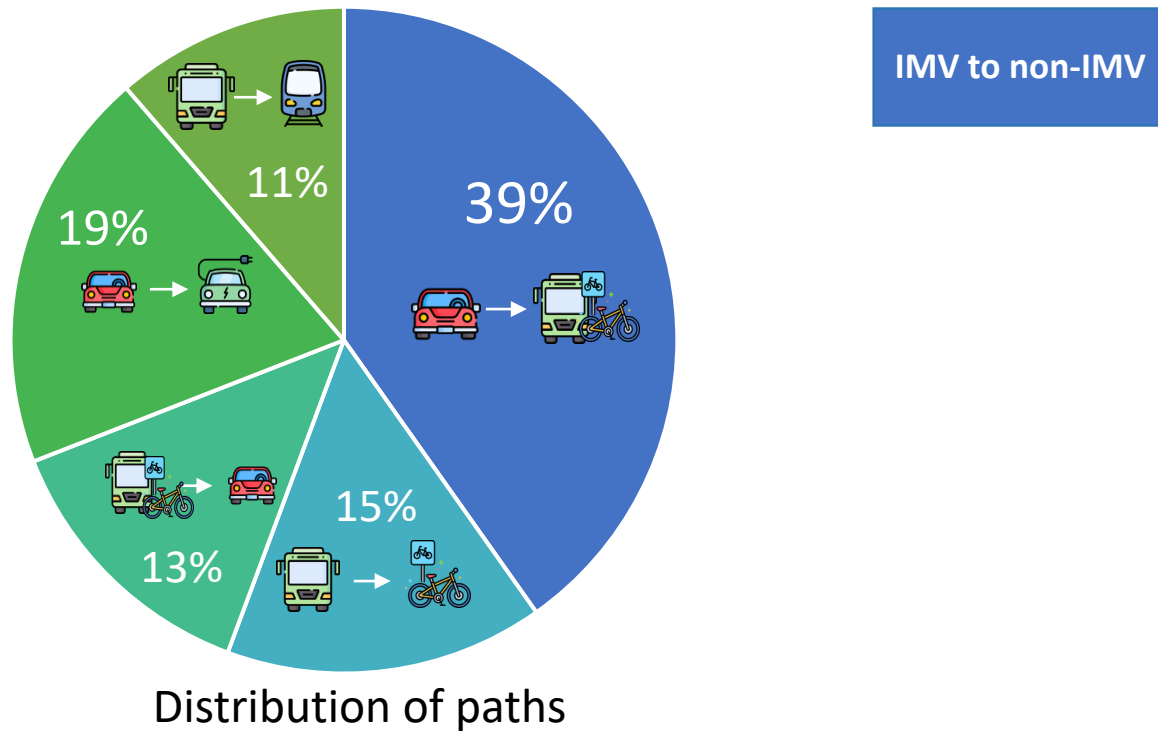
Normative aspects   
Feeling of control

Specific for 

HAPA's determinants

Response efficacy

# Discussion/Conclusion



Thank you for your attention!

Do you have any question?

Host and organiser:



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Supporting organisations:



Co-sponsor:



Appendix: psychological determinants investigated

Models	Determinants		Dimensions	Items	Alphas	Adapted from	
TIB (Triandis, 1977)	Habit			Taking [Mode X] is something ...	P <sub>1</sub> :.82 P <sub>2</sub> :.83 P <sub>3</sub> :.84 P <sub>4</sub> :.79 P <sub>5</sub> :.84	French SRHI Philipps-Bertin et al. (in press)	
				... I do frequently			
				... I do automatically			
				... I do without thinking			
				...that is part of my daily routine			
				... is typically me			
				... I have been doing for a long time			
TPB (Ajzen, 1991), Work of Steg et al. (2001), Steg (2003), Steg (2005)	Attitudes	Instrumental			P <sub>1m</sub> :.64 P <sub>1a</sub> :.66 P <sub>2m</sub> :.63 P <sub>2a</sub> :.62 P <sub>3m</sub> :.79 P <sub>3a</sub> :.80 P <sub>4m</sub> :.72 P <sub>4a</sub> :.68 P <sub>5m</sub> :.56 P <sub>5a</sub> :.80	Inspired by: Steg (2003)/ Steg (2005)	
			Comfort	[Mode X] is comfortable			
			Ability transport	[Mode X] enables to carry easily things and people			
			Price	Travelling by [Mode X] is expensive			
			Time	I save time travelling by [Mode X]			
			Independency	With [Mode X], I can go where I want wherever I want to			
			Daily utility	With [Mode X], I can easily carry out my daily activities			
		Symbolic direct			P <sub>1m</sub> :.94 P <sub>2m</sub> :.94 P <sub>3m</sub> :.93 P <sub>4m</sub> :.95 P <sub>5m</sub> :.90		
			Appreciation	I feel appreciated because I travel with [Mode X]			
			Good impression	I make a good impression because I travel with [Mode X]			
			Seduction	I can seduce because I travel with			
		Symbolic indirect			P <sub>1m</sub> :.89 P <sub>1a</sub> :.80 P <sub>2m</sub> :.88 P <sub>2a</sub> :.84 P <sub>3m</sub> :.89 P <sub>3a</sub> :.94 P <sub>4m</sub> :.90 P <sub>4a</sub> :.93 P <sub>5m</sub> :.85 P <sub>5a</sub> :.87		
			Appreciation	Users of [Mode X] are appreciated by others			
			Good impression	Users of [Mode X] are making a good impression			
			Seduction	Users of [Mode X] seduce a lot			
		Identity				Charng et al. (1988) / Sparks and Shepherd (1992)	
			Affirmation	[Mode X] enables me to affirm myself			
			Feeling of lost	I would feel I’m losing something if I had to stop using [Mode X]			
			Typicality	I feel like a typical user of [Mode X]			
		Affective			Unpleasant/Pleasant	P <sub>1m</sub> :.78 P <sub>1a</sub> :.80 P <sub>2m</sub> :.90 P <sub>2a</sub> :.86 P <sub>3m</sub> :.88 P <sub>3a</sub> :.83 P <sub>4m</sub> :.90 P <sub>4a</sub> :.93 P <sub>5m</sub> :.84 P <sub>5a</sub> :.95	Inspired by: Steg (2003)/ Steg (2005)
					Boring/Exciting		
					Stressing/Relaxing		
					I like traveling by [Mode X]		

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TPB (Ajzen, 1991) / TIB (Triandis, 1977)	Social norms	Descriptive	What percentage of people are using daily [Mode X] to travel?		e.g., Berenbaum et al. (2019) ; Armitage and Conner (1999)
		Prescriptive	Important people for me would like that I travel with [Alternative X]		
NAM (Schwartz, 1977)	Awareness of negative consequences		[Mode X] contributes to climate change	P <sub>1</sub> ::.87	
			[Mode X] damages my health	P <sub>2</sub> ::.78	
			[Mode X] damages health of others	P <sub>3</sub> ::.78	
			[Mode X] causes accidents	P <sub>4</sub> ::.79	
			I can be assaulted when I’m travelling with [Mode X]	P <sub>5</sub> ::.72	
			[Mode X] damages living environment		
NAM (Schwartz, 1977)	Ascription of responsibility		When I’m using [Mode X], I contribute to climate change	P <sub>1</sub> ::.95	
			When I’m using [Mode X], I damage my health	P <sub>2</sub> ::.87	
			When I’m using [Mode X], I damage health of others	P <sub>3</sub> ::.79	
			When I’m using [Mode X], I damage my living environment	P <sub>4</sub> ::.92	
				P <sub>5</sub> ::.81	
NAM (Schwartz, 1977) TIB (Triandis, 1977)	Personal Norm		I feel a moral obligation to stop travelling by [Mode X]		Bamberg (2013b)
TPB (Ajzen, 1991) / TIB (Triandis, 1977) / HAPA (Schwarzer, 2008)	Perceived	Change self-efficacy	If I want to, I can easily change my mode of travel		Rhodes and Courneya (2003)
	Behavioral Control	Task self-efficacy	I have all the skills to travel by [Alternative X]		
		Feeling of control to stop	Stop traveling by [Mode X] is up to me		Armitage and Conner (1999); Armitage et al. (1999)
		Feeling of control to change	Starting to travel by [Alternative X] is under my control		

HAPA (Schwarzer, 2008)	Planification	I identified all the elements needed to start getting around with a car (itinerary, material...)		
HAPA (Schwarzer, 2008)	Response efficacy	Traveling by [Alternative X] can decrease climate change	P <sub>1</sub> ::.83	Inspired by Langbroek et al. (2017)
		Traveling by [Alternative X] can ameliorate my health	P <sub>2</sub> ::.87	
		Traveling by [Alternative X] can ameliorate the health of numerous people	P <sub>3</sub> ::.84	
		Traveling by [Alternative X] can decrease the number of accidents	P <sub>4</sub> ::.83	
		Traveling by [Alternative X] can decrease the number of assaults	P <sub>5</sub> ::.91	
		Traveling by [Alternative X] can ameliorate my living environment		
	Participative efficacy	If I'm the only one to stop traveling by [Mode X]...	P <sub>1</sub> ::.88	
		... climate change won't decrease	P <sub>2</sub> ::.85	
		... my health won't be protected	P <sub>3</sub> ::.85	
		... health of others won't be protected	P <sub>4</sub> ::.82	
		... the number of accidents won't decrease	P <sub>5</sub> ::.86	
		... my living environment won't be protected		
		I don't see why I should change if others are not changing		